

Introduction to 4GL Development Environment

Part : 2

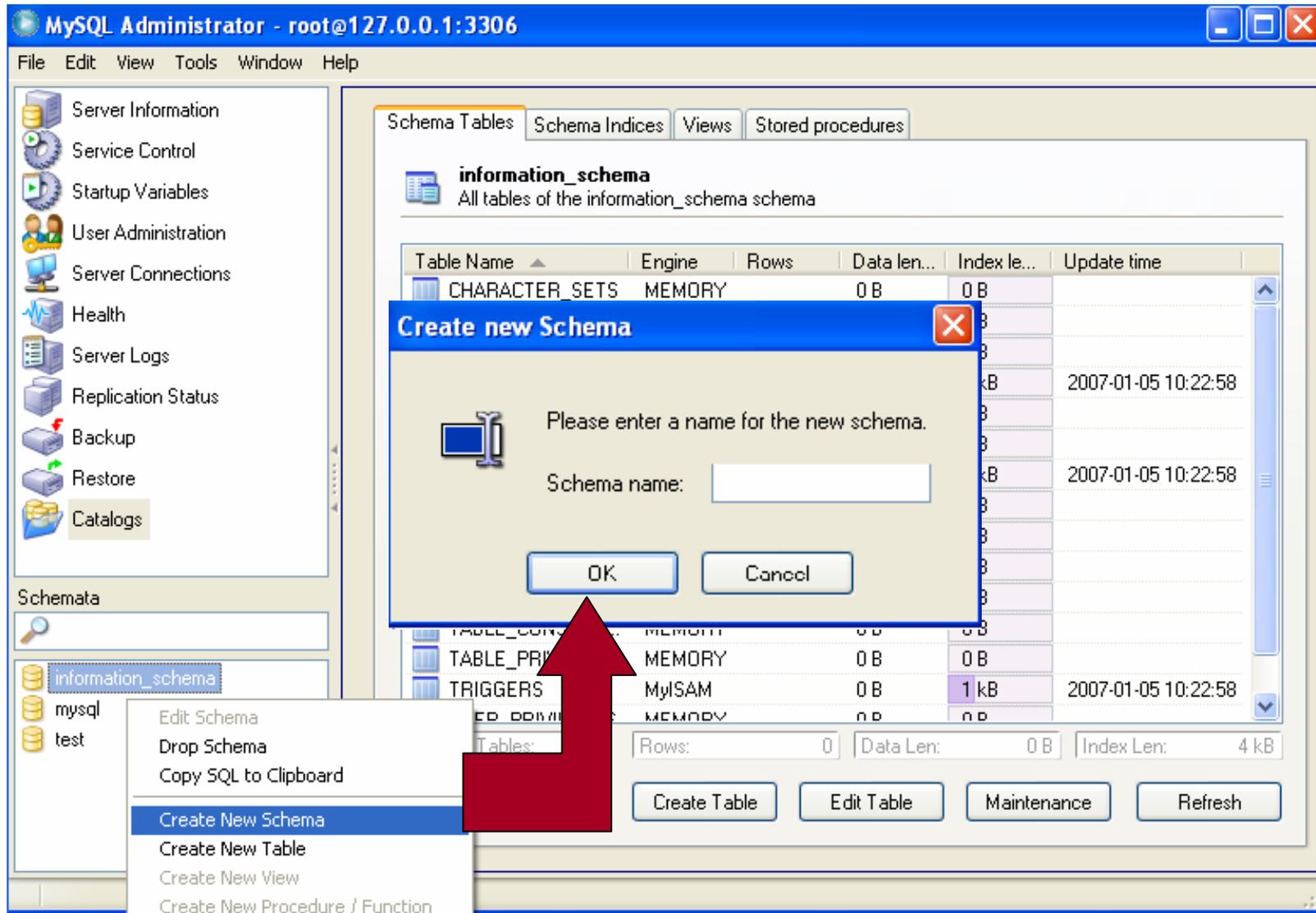
Duration : 06hrs



Creating Databases and Tables; Creating and using Forms, Queries and Reports

MySQL and MS Access Examples

- Creating a new database using MySQL
 - right-click on an existing database and choose the Create New Schema option.



- Example: The following relations are part of a Hospital relational database schema.

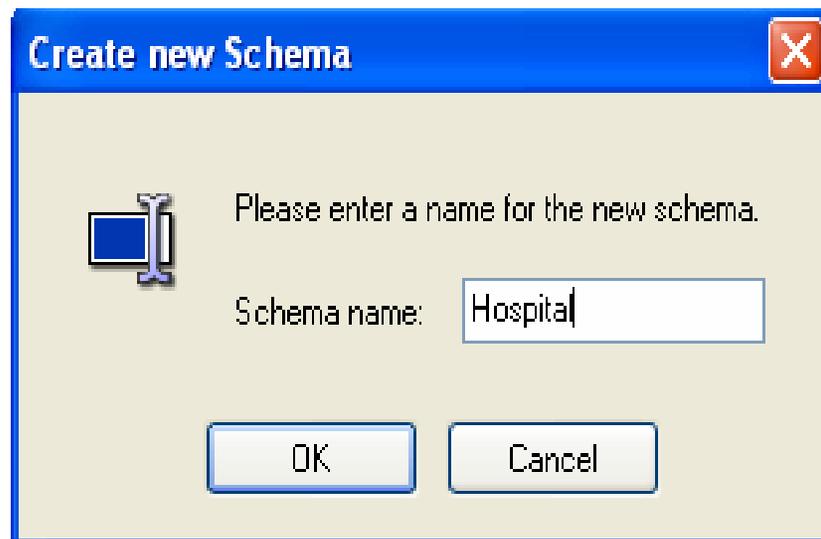
Patient (patientCode, pname, dob, address, sex, telephone)

History (patientCode, treatmentDate, drug, dosage, quantity, instructions)

Treatment (patientCode, treatmentDate, doctor, cost)

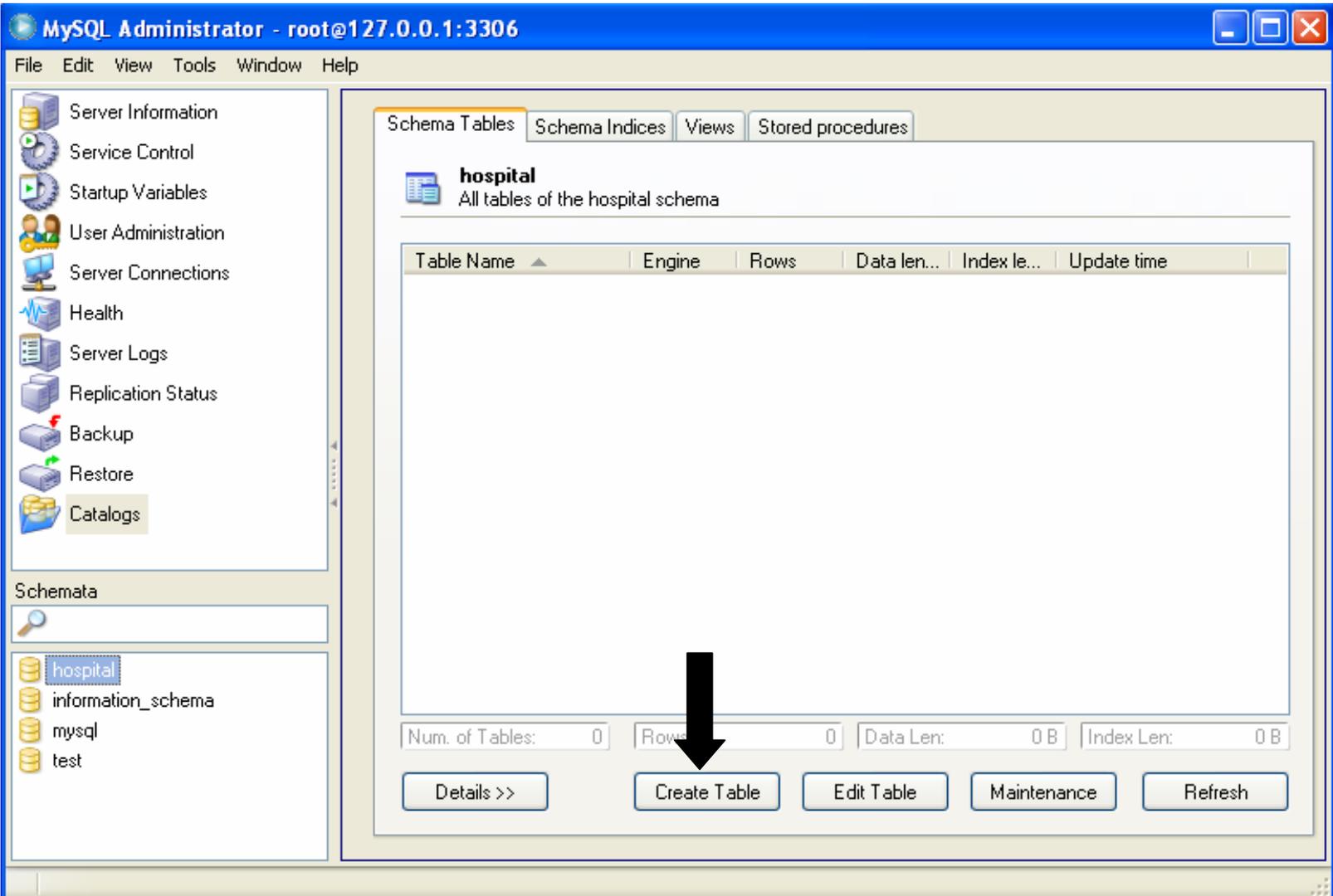
Medicine (drug, dosage, unit-cost)

Suppose that all the relations were created by the database administrator.

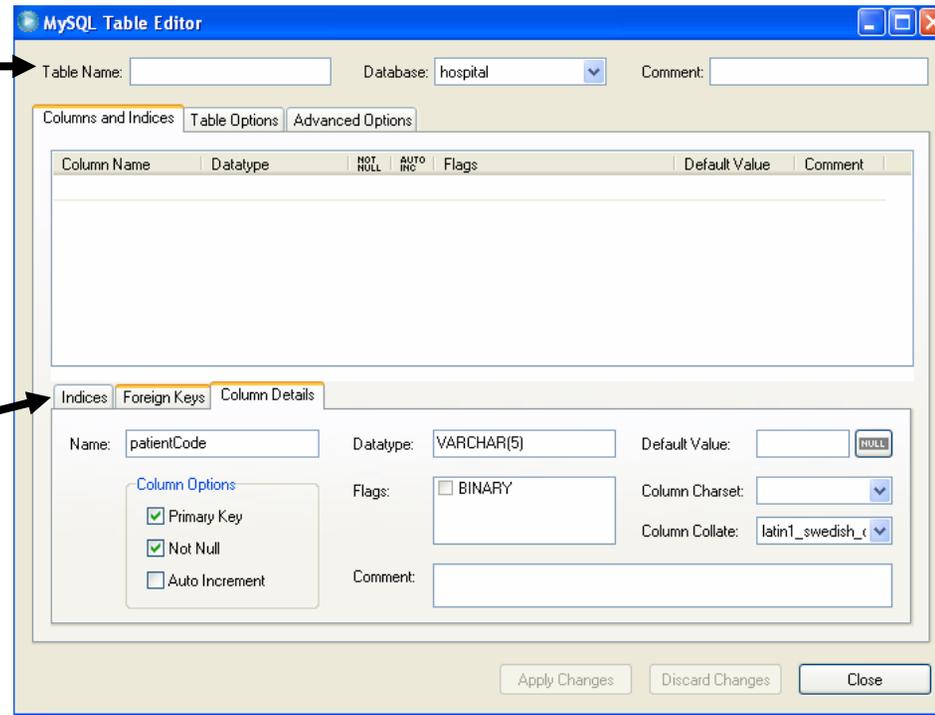


Type in the name of the schema on the text box and click on the OK button to create the new database.

- Creating tables
 - Select the appropriate database from the list of Schemata
 - The following screen will appear on the right side of the window
 - Click on the 'Create Table' button to create a new table.



Name of the table

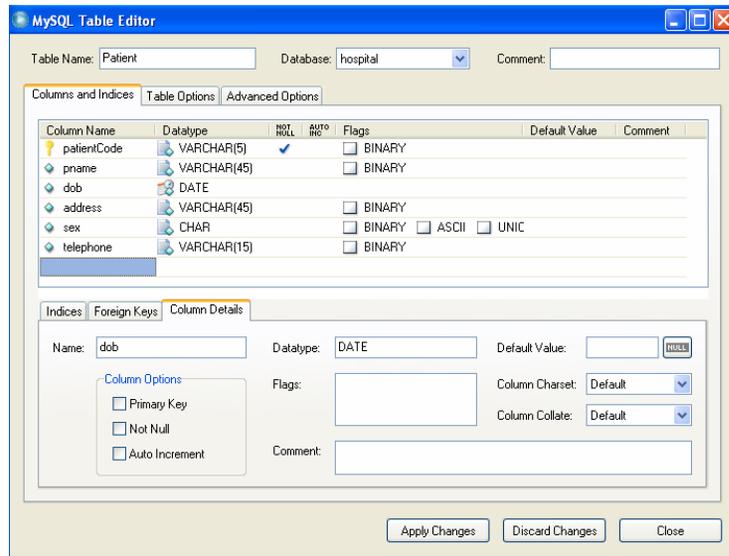


The screenshot shows the MySQL Table Editor window. At the top, there is a 'Table Name' field, a 'Database' dropdown menu set to 'hospital', and a 'Comment' field. Below this are three tabs: 'Columns and Indices', 'Table Options', and 'Advanced Options'. The 'Columns and Indices' tab is active, displaying a table with columns for 'Column Name', 'Datatype', 'NOT NULL', 'AUTO INC', 'Flags', 'Default Value', and 'Comment'. Below the table is the 'Column Details' section, which is also active. It contains fields for 'Name' (patientCode), 'Datatype' (VARCHAR(5)), 'Default Value' (with a NULL button), 'Flags' (with a BINARY checkbox), 'Column Charset', and 'Column Collate' (latin1_swedish_c). There is also a 'Comment' field. At the bottom of the window are buttons for 'Apply Changes', 'Discard Changes', and 'Close'.

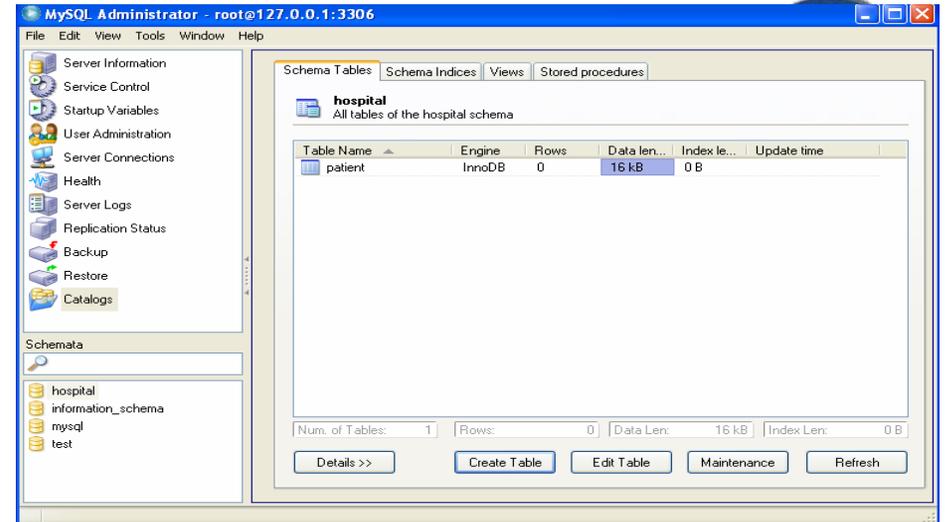
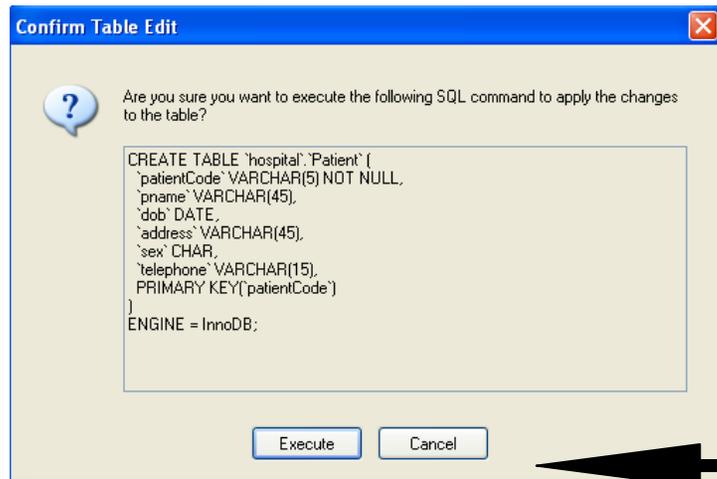
Column details can be provided on this space.

- The tabbed area is divided into three sections:
 - *Columns and Indices*: Use the Columns and Indices tab to create and modify the table's column and index information. You can also create FOREIGN KEY relationships using this tab.
 - *Table Options*: Use the Table Options tab to choose the storage engine and default character set used by the table.
 - *Advanced Options*: Use the Advanced Options tab to configure options such as the per-table storage directory, MERGE and RAID table options, and table/row length options.

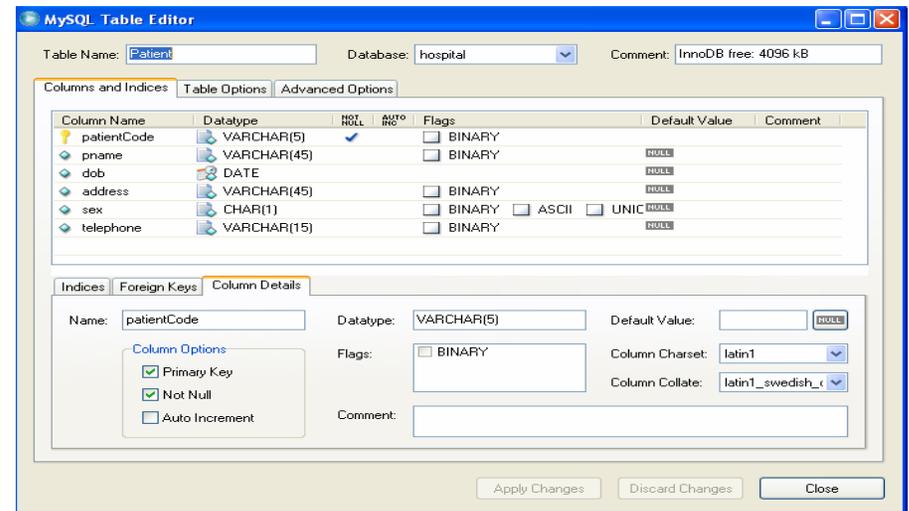
- **Example**



Click on 'Apply changes' button

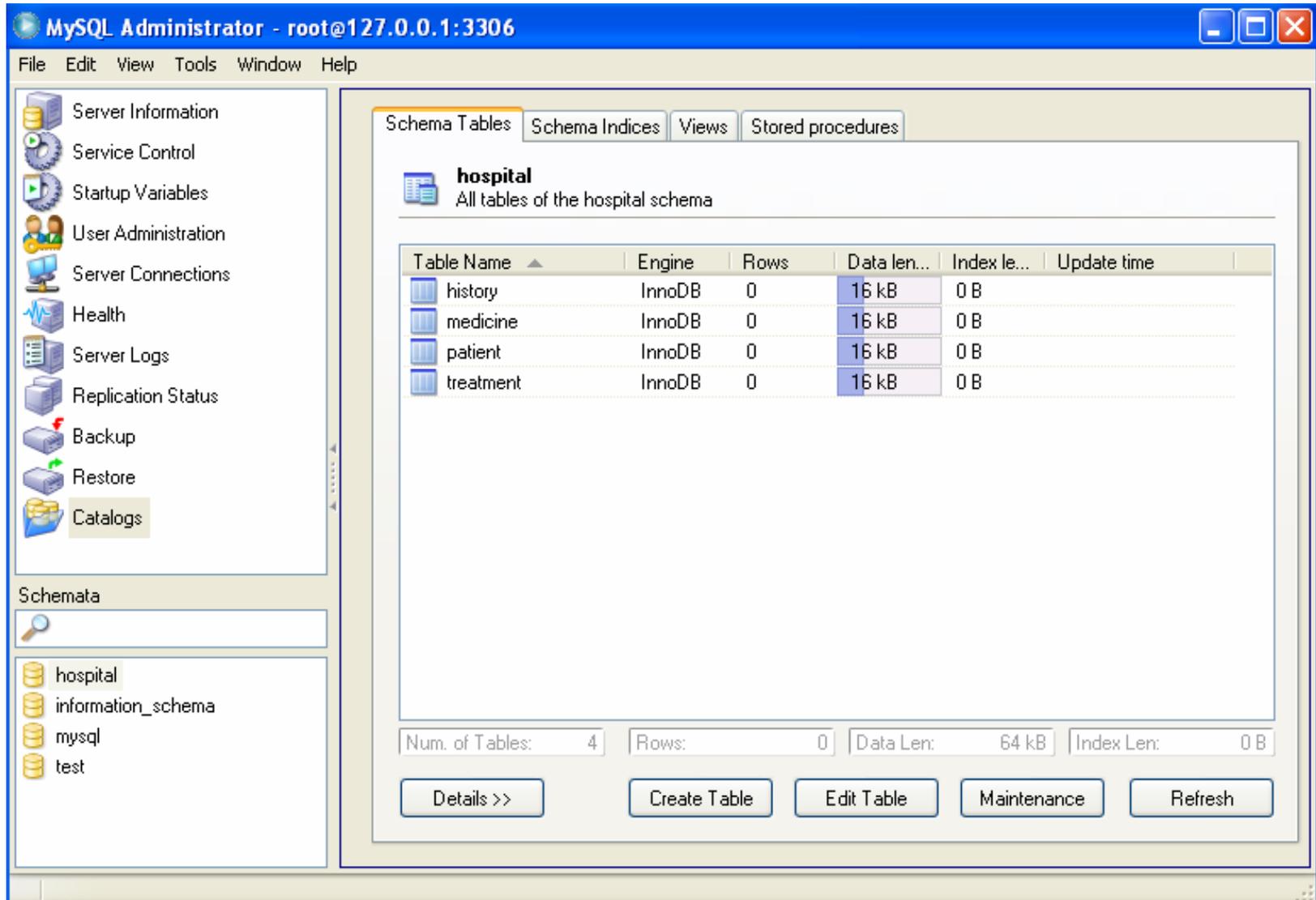


Finally close the window



Click on 'Execute'

- After creating all the tables for the Hospital relational database schema, you will get the following window.



The screenshot shows the MySQL Administrator interface. The title bar reads "MySQL Administrator - root@127.0.0.1:3306". The menu bar includes "File", "Edit", "View", "Tools", "Window", and "Help". On the left, there is a navigation pane with icons for "Server Information", "Service Control", "Startup Variables", "User Administration", "Server Connections", "Health", "Server Logs", "Replication Status", "Backup", "Restore", and "Catalogs". Below this is a "Schemata" section with a search box and a list of schemas: "hospital", "information_schema", "mysql", and "test". The main area displays the "hospital" schema, with tabs for "Schema Tables", "Schema Indices", "Views", and "Stored procedures". The "Schema Tables" tab is active, showing a table with the following data:

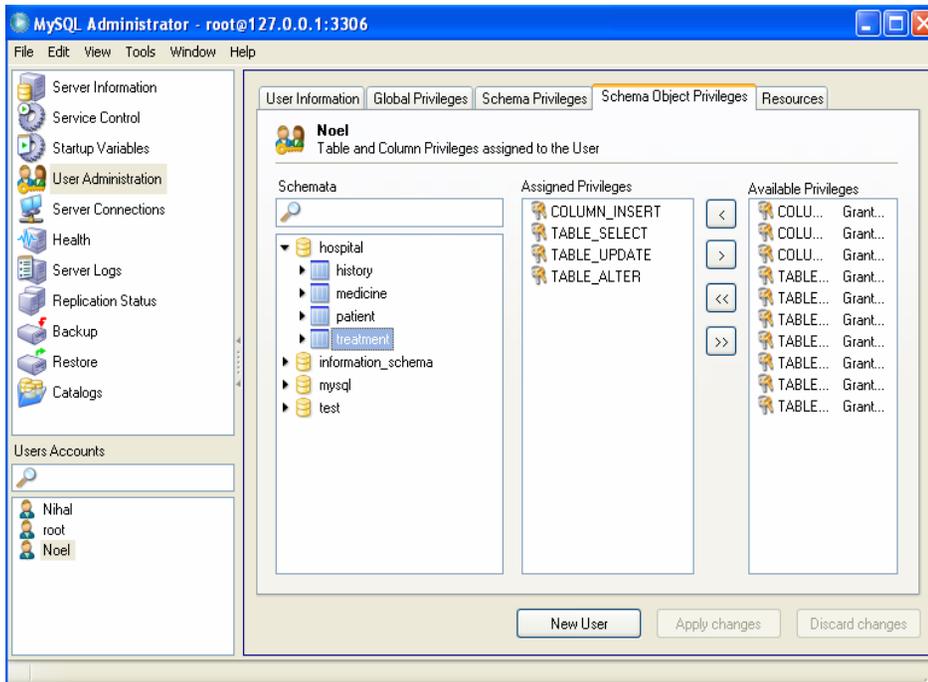
Table Name	Engine	Rows	Data len...	Index le...	Update time
history	InnoDB	0	16 kB	0 B	
medicine	InnoDB	0	16 kB	0 B	
patient	InnoDB	0	16 kB	0 B	
treatment	InnoDB	0	16 kB	0 B	

At the bottom of the main area, there are summary statistics: "Num. of Tables: 4", "Rows: 0", "Data Len: 64 kB", and "Index Len: 0 B". Below these are buttons for "Details >>", "Create Table", "Edit Table", "Maintenance", and "Refresh".

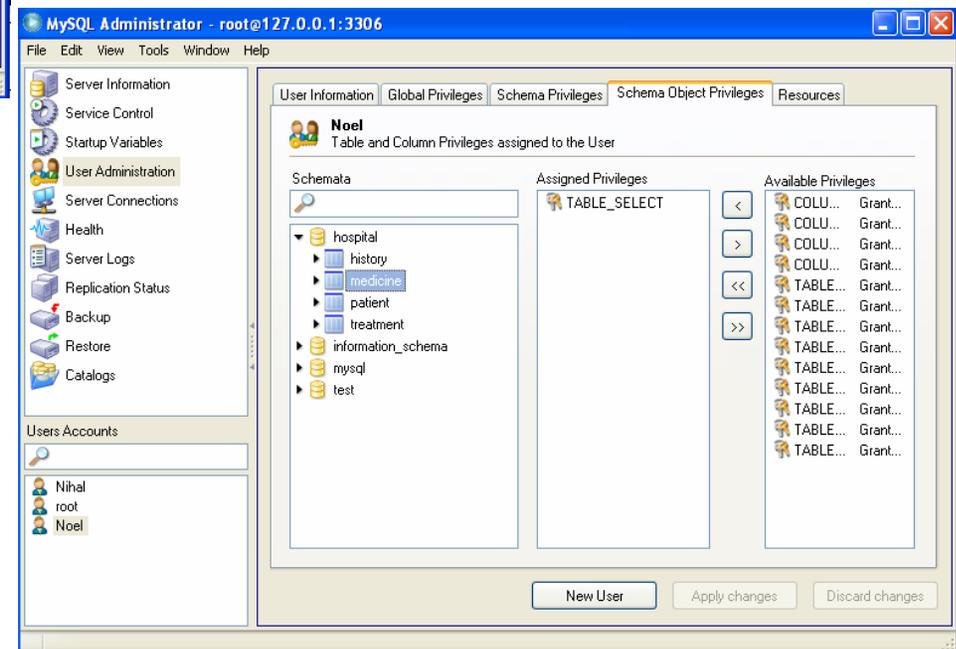
- Example: Suppose the DBA (root user) needs to grant the following privilege to user account 'Noel'

- Account Noel can
 - retrieve or modify *Treatment* relation

- ❖ Select the user 'Noel'
- ❖ Double click on the Hospital Schemata
- ❖ Select the Table '*Treatment*'
- ❖ Grant the privileges 'TABLE_SELECT', 'TABLE_UPDATE', 'TABLE ALTER', 'COLUMN_INSERT'
- ❖ Click on the 'Apply Changes' button



- retrieve all the attributes of Medicine relation
 - ❖ Select the user 'Noel'
 - ❖ Double click on the Hospital Schemata
 - ❖ Select the Table '*Medicine*'
 - ❖ Grant the privilege 'TABLE-SELECT'
 - ❖ Click on the 'Apply Changes' button



▪ Retrieve all the attributes of Patient relation except for dob and address.

- ❖ Select the user 'Noel'
- ❖ Double click on the Hospital Schemata
- ❖ Double click on the Table 'Patient'
- ❖ Grant the privilege 'COLUMN-SELECT' for each column one by one except for the dob and address
- ❖ Click on the 'Apply Changes' button

